

### **ABSTRACT OF THE DISCLOSURE**

A method of forming a trench in a semiconductor device includes forming a sacrificial layer on a silicon wafer and selectively etching the sacrificial layer to form a LOCOS opening having a predetermined width. Thermal oxidation is performed on a portion of the silicon wafer exposed through the LOCOS opening to form a LOCOS oxide layer. Also, etching is performed on the LOCOS oxide layer and the silicon wafer to a desired depth to form a trench. During this process, etching is performed such that the LOCOS oxide layer is left remaining on the silicon wafer at an area corresponding to edges of the trench. An insulation layer is deposited such that the trench is filled with a material of the insulation layer. The present invention also provides a trench in a semiconductor device used as a device isolation region formed in a silicon wafer. Upper corner areas of the silicon wafer adjacent to the trench are rounded, and a LOCOS oxide layer is formed on the corner areas.